Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Vahid Bakhtiar

GENERAL INFORMATION:

Name:	Trace Die Cast, Inc.
Address:	140 North Graham Avenue, Bowling Green, KY 42101
Date application received:	3/7/2007
SIC Code/SIC description:	3363, Aluminum Die-Castings
Source ID:	21-227-00085
Agency Interest:	4142
Activity:	APE20070001
Permit:	V-07-045, Renewal

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance	[ ] General permit
[ ] Permit modification	[ ] Conditional major
__Administrative	[X] Title V
__Minor	[ ] Synthetic minor
__Significant	[ ] Operating
[X] Permit renewal	[X] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance [ ] Compliance schedule included

[X] Compliance certification signed

APPLICABLE REQUIREMENTS LIST:

[ ] NSR	[ ] NSPS	[ ] SIP
[ ] PSD	[ ] NESHAPS	[ ] Other
[ ] Netted out of PSD/NSR	[ ] Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[ ] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[ ] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Potential to Emit (TPY)
PM	86.66
PM10	84.97
Chromium	2.44
Lead	0.01994
Manganese	0.91
Nickel	0.61
HCl	5.006
HF	2.97
CO	23.97
NO_2	28.83
SO_2	0.17
VOC	205.26
Ethylene glycols	6.89

SOURCE PROCESS DESCRIPTION:

Trace Die Cast, Inc. melts aluminum ingots before casting them into aluminum parts. Clean aluminum ingots are preheated in a 0.35-mmbtu/hour, natural gas-fired pre-heater before charging them into 6 reverberatory melt furnaces, emission points 101(CF1)-106(CF6). The furnaces are natural gas–fired and have a total melting rate of 13 tons/hour of aluminum ingots. Both emission points 101(CF1) and 102(CF2) have a maximum continuous rating of 8.0 mmbtu/hour each while emission point 103(CF3) is 6.0 mmbtu/hour and 104(CF4), 105(CF5) and 106(CF6) are 10.0 mmbtu/hour. The molten aluminum is fluxed with chloride and fluoride based flux salts. Aluminum dross that is formed is sent off site for metal recovery. The melted and fluxed aluminum is then transferred to 38 holding furnaces, emission points 201(HF1)-216(HF16), 221(HF21)-225(HF25), 230(HF30)-236(HF36), 241(HF41)-245(HF45), and 251(HF51)-255(HF55) where it is fluxed again using chloride and fluoride based flux salts. The holding furnaces have a maximum holding rate of about 17 tons/hour. Each holding furnace, except for 230(HF30)-233(HF33), has a maximum continuous rating of 0.25 mmbtu/hour. Emission points 230(HF30)-233(HF33) each has a rating of 0.33 mmbtu/hour. Subsequently, the molten aluminum from the holding furnaces is cast into aluminum parts in 38 corresponding die cast machines, emission points 301(DCM1)-316(DCM16), 321(DCM21)-325(DCM25), 330(DCM30)-336(DCM36), 241(DCM41)-245(DCM45), and 251(DCM51)-255(DCM55). Five different casting lubricants, grease, and oil are used in the die cast machines along with water. The aluminum castings are then trimmed by a hydraulic press before they are polished by steel shots in 3 shot blast machines, emission points 501(SB1)-504(SB4), which have a total rate of 6.75 tons/hour of aluminum castings. The effluent water from the die cast machines are evaporated in 6 evaporators, emission points 401(Evap1)-406(Evap6), to separate the oils from the water. The trimmed and shot blasted aluminum scrap is collected and sent back to the melt furnaces to be re-melted. Spent steel shots are collected and disposed of in landfill.

EMISSION AND OPERATING CAPS DESCRIPTION:

The following is a summary of emission caps for emission points subject to 401 KAR 59:010:

Emission Points	Pollutants	Emission Caps (Per Emission Point)
101(CF1)	Particulate Opacity	5.52 lbs/hour, 24.17 TPY 20%
102(CF2)		
104(CF4)		6.34 lbs/hour, 27.75 TPY 20%
105(CF5)		7.09 lbs/hour, 31.05 TPY 20%
106(CF6)		
504(SB4)		8.15 lbs/hour, 35.68 TPY 20%
505(SB5)		

The operating limitation for the melt furnaces is that only clean aluminum ingots shall be melted. The evaporators are subject to the operating standards given in 401 KAR 63:020.

RECENT CONSTRUCTIONS AND CHANGES:

In February of 2004 Trace Die Cast applied to construct additional equipment and modify existing equipment at the facility. No provisions of the permit are changed from the initial issuance. The following is a description of changes and additions.

Emission point 107 (CMF07) is a new central melt furnace rated at 10 mmbtu per hour and capable of melting 3 tons per hour of aluminum. Points 202-208 (HF2-HF8) and 212-215 (HF12-HF15) are now rated for 0.33 mmbtu/hr and capable of holding 0.625 tons per hour of aluminum. Points 261-265 (HF61-HF65) and points 271-275 (HF71-HF75) are new holding furnaces each rated for 0.33 mmbtu per hour and capable of holding 1.5 tons per hour of aluminum. Points 302-308 (DCM2-DCM8) and points 312-315 (DMC12-DCM15) are now each rated for 0.625 tons per hour. The new die cast machines, 361-365 (DCM61-DCM65 and 371-375 (DCM71-DCM75) are each rated for 1.5 tons per hour of aluminum. Two new Process Wastewater Evaporators have been added, points 407 (Evap7) and 408 (Evap8). Each has a heat input rating of 1.5 mmbtu per hour and an process rate of 130 gallons per hour. Finally a new shot blast machine has been added, point 505 (SBM5) and uses shot at the rate of 0.036 tons per hour.

OPERATIONAL FLEXIBILITY:

None